

Remarks:

Claims 39-63 remain for consideration in this application, with claims 39, 56, 59, and 61 being in independent format. Claims 1-38 have been canceled.

Turning now to the March 7, 2003 office action in the parent application (Serial No. 10/277,654), the examiner raised a rejection to the claims under 35 U.S.C. § 112, second paragraph (see paragraph 2 of that action). The applicants are uncertain of what the examiner intended with this rejection. However, claims 1-38 have been canceled so it is believed that this rejection has been rendered moot as a result. Furthermore, the pending claims have been drafted to recite the presence of a photopolymerizable polymer binder so it is further believed that this limitation will satisfy the examiner. Support for this limitation can be found at page 8, line 14 of the specification.

In paragraphs 5-9 of the action, the examiner raised prior art rejections against the claims of the parent application. The presently pending independent claims are similar in scope to canceled dependent claims 15 and 22, with the additional recitation that the polymer binder be photopolymerizable. The rejections raised by the examiner in paragraphs 5 and 6 of the action were not raised against claims 15 and 22. Therefore, it is believed that the rejections from paragraphs 5 and 6 of the action do not apply to the pending claims.

The remaining rejections from this office action are obviousness rejections set forth in paragraphs 7-9 of the action. In these rejections, the examiner has relied upon the Nakajima et al. reference (paragraph 7), the Hatai reference combined with JP 55-117142 and/or JP 02-173602 and further in view of the Nakamura ('257), Nakamura et al. ('183), and Koyanagi et al. references (paragraph 8), and the Hatai reference combined with JP 55-117142 and/or JP 02-173602 and further

in view of the Nakamura ('257), Nakamura et al. ('183), Koyanagi et al., and Buazza et al. references (paragraph 9).

It is respectfully submitted that the presently pending claims avoid the teachings (either singly or combined) of these references. Each of the pending claims requires the presence of a photopolymerizable polymer binder, a pigment, and an azo-metal complex dye in a solvent system. Furthermore, each of the claims recites two properties of the photosensitive composition or cured layer which are not simultaneously present in any of the cited prior art compositions or layers. Specifically, independent claims 39 and 59 recite that the composition has a volume resistivity of greater than 10^8 ohm-cm and an optical density of 3.0 or greater when formed into a film having a thickness of 1 micron or less while independent claims 56 and 61 recite a film having a volume resistivity of greater than 10^8 ohm-cm and an optical density of 3.0 or greater when the film has a thickness of 1 micron or less.

The prior art compositions do not simultaneously include a photopolymerizable polymer binder, a pigment, and an azo-metal complex dye in a solvent system while possessing the recited optical density and resistivity properties when formed into such thin films. Furthermore, there is no teaching or suggestion of how to modify the prior art compositions to obtain these properties. This combination also results in a composition which has a substantially increased shelf life, even at high pigment loadings (see, e.g., Example 1 of the Specification), and improved photolithography characteristics and coating qualities as compared to prior art attempts at an organic black matrix composition.

It is noted that each of the references cited by the Examiner has attempted to address the long-felt need for photosensitive black matrix materials having the foregoing properties. While this has certainly been attempted numerous times by others skilled in the art, no one has successfully made such a photosensitive composition with all of the necessary properties (i.e., simultaneous high optical density, high resistivity, and long shelf life). In part, this has been due to the use of carbon black as a pigment in the prior art compositions. While carbon black has acceptable optical densities, its resistivity is low. In fact, the higher the optical density, the lower the resistivity (see, e.g., de Keyzer et al., Novel Black Photoresists with High Photospeed and High Optical Density Based on Latent Pigments, *International Display Workshop*, 291 (1998); Asuma et al., Electrical Characteristics of Black Matrix for Super-TFT-LCDs, *International Display Workshop*, 169-170 (1997)). Thus, the prior art compositions which include carbon black (e.g., Nakajima et al., JP 55-117142, Koyanagi et al.) cannot achieve these properties.

Finally, the examiner provisionally rejected the claims under the judicially created doctrine of obviousness-type double patenting in light of U.S. Patent Application No. 10/277,654 (see paragraph 11). The '654 application has been abandoned so this rejection should be withdrawn. Also, in paragraph 12 of the action, the examiner rejected the claims for obviousness-type double patenting in light of U.S. Patent No. 5,780,201. It is submitted that this rejection should also be withdrawn in light of the present amendment as these claims are now patentably distinct. For example, the presently pending claims recite the presence of a photopolymerizable polymer binder thus claiming a black matrix composition which eliminates the need for a photoresist. This is not the case with the

'201 patent where a polyimide precursor vehicle is recited, and thus a photoresist is required to use that composition.

In conclusion, the applicants were the first to make the claimed invention, and the claimed invention is not taught or suggested by the prior art. In view of the foregoing, a Notice of Allowance appears to be in order and such is respectfully requested. However, if further issues remain in this application, it is suggested that the Examiner contact the undersigned at 800-445-3460.

Any additional fee which is due in connection with this amendment should be applied against our Deposit Account No. 19-0522.

Respectfully submitted,

By 
Tracy Bornman, Reg. No. 42,347
HOVEY WILLIAMS LLP
2405 Grand Boulevard, Suite 400
Kansas City, Missouri 64108
816/474-9050

ATTORNEYS FOR APPLICANT(S)